

CLAIMS

1. Device (1, 8, 13, 22, 32, 41, 50) to maintain in contact, to regulate, adjust or close parts of clothing (31, 34, 83, 102, 108, S, 115, 133), undergarments such as bras, garter belts, or of any other accessory (117, 142), comprising a first part equipped with at least a first magnetic component (4, 11, 17, 25, 30, 52), and a second part (5, 19, 27) comprising at least a second magnetic component (6, 12, 18, 25, 30, 52) making it possible to fasten, regulate, adjust or close clothing, the undergarment or the accessory when one of the aforesaid first and second parts is used by a user to interact with the other part, characterized in that each magnetic component is composed of at least two groups comprising each one at least a magnet, namely a group of positive magnet(s) (4', 6'; 11', 12''; 17''', 18''; 25', 30'') and a group of negative magnet(s) (4'', 6''; 11'', 12''; 17'', 18', 18'''; 25'', 30') the magnets of a similar component are fixed directly or indirectly to the same support and/or with each other, and being exclusive to interact with the groups of opposite signs of the other magnetic component.
2. Device as claimed in claim 1, characterized by the fact that at least one magnetic element contains a first layer of ferromagnetic soft lining elements (215, 227, 237) fixed to the magnet groups (214; 225, 226;

236), the mentioned first layer is fixed on the opposite side of the other magnetic component.

3. Device as claimed in any of the preceding claims, characterized by the fact that two magnetic components containing magnetic groups, the groups of the first component being suitable to cooperate with the groups of the opposite forces of the second component.

4. Device as claimed in one of the preceding claims 1 and 2, characterized by the fact that the other element is devoid of magnets and shaped from a layer of soft ferromagnetic elements (216, 228, 229; 238).

5. Device as claimed in any of the preceding claims, characterized by the fact that the magnets of the same component are not rigidly fixed among each other in any irremovable way.

6. Device (13) as claimed in any of the preceding claims, characterized in that the magnets (17', 17'', 17'''; 18', 18'', 18''') of the same component (17, 18) are fixed rigidly among each other in an irremovable way by joining or welding and/or are made of only one part, with sectors of magnetization of different polarities.

7. Device (1, 8, 13) as claimed in any of the preceding claims, characterized in that at least one component includes at least two magnets by group, positive magnets (4', 6'; 11', 12''; 17', 17''', 18'') of an component being laid out in alternation with the negative magnets (4'', 6''; 11', 12''; 17'', 18', 18'') of the same component.

8. Device as claimed in any of the preceding claims, characterized in that the magnets (4', 4''; 77, 78) of the same component are fixed side by side on the support.
9. Device as claimed in any of the preceding claims,
5 characterized by positive magnets (70, 71, 72, 73, 74) of the same component located on a different side of the negative magnets, which allows overlapping the first component with the second component when they interact with each other.
10. Device as claimed in claim 9, characterized in that the
10 magnetic field of the higher plane is bevelled to the bottom, to form a half dovetail.
11. Device as claimed in any of the preceding claims, characterized by the fact that at least one magnetic component includes at least one magnet row which is inserted
15 in a layer of elastic glue which is resistant to domestic washing, itself fixed to the rigid or supple support.
12. Device as claimed in any of the preceding claims, characterized by the fact that at least one magnetic component includes, in alternance, either magnets or magnet
20 groups, or ferromagnetic elements in soft material, of different thicknesses, which allows their overlapping with lateral locking of the magnets or ferromagnetic elements in soft material of a larger thickness of the first mentioned one, with the magnets or ferromagnetic elements of a greater
25 thickness of the other one.

13. Device as claimed in any of the preceding claims, characterized by the fact that at least one magnetic element includes pieces of the the end of greater thickness conferring a section in U to the component, the mentioned pieces of the end being arranged to cover at least in part the external sides of the magnets or ferromagnetic elements in soft material of the lateral end of the device.
14. Device (1, 8, 13, 22, 41) as claimed in any of the preceding claims, characterized in that the first part (2, 14, 23) includes a first sheath (3; 9; 15, 16; 24; 42) in which the first component (4, 17) is inserted and is mobile, so that a multitude of adjustments is possible thanks to the sliding motion of the first magnetic component in the aforementioned first sheath.
15. Device (8, 41) as claimed in any of the preceding claims, characterized in that the second magnetic component is included and mobile in a second sheath (10, 42) pertaining to the second part.
16. Device as claimed in any of claims 1 to 14, characterized in that the second magnetic component is fixed at the second part.
17. Device (8) as claimed in any of claims 14 to 16, characterized in that the first part and/or the second part comprise two sheaths (9,10).
18. Device as claimed in any of claims 14 to 17, characterized in that the

sheath or magnetic component is silicone on the exterior to increase adherence with the other part or the resistance to the tearing apart in the level of fixing.

19. Device as claimed in one of claims 14 to 18, characterized in
5 that the sheath or magnetic component is reinforced and/or nonrectangular in shape.
20. Device as claimed in any of the preceding claims, characterized in that one of the first and second parts is at least partly formed by or a strap (91, 96, 106, 111, 8, 143;
10 148, 149).
21. Device as claimed in any of the preceding claims, characterized in that one of the magnetic first and second components is formed by a magnetized zone of the aforementioned strap belonging to the first or second
15 corresponding part.
22. Device as claimed in any of the preceding claims, characterized in that the magnets or the ferromagnetic elements in the soft material of the magnetic component of a part of the device, has a concave shape, and the magnets or
20 the ferromagnetic elements in the soft material of the magnetic component of the other part has a convex shape that is complementary to the aforementioned concave shape.
23. Device (32) as claimed in any of the preceding claims, characterized in that one or more magnets (33) or
25 ferromagnetic elements in a soft material of each magnetic component have a flat, trapezoid, rectangle, circular or triangular shape.

24. Device as claimed in any of the preceding claims, characterized in that each magnet has an antimagnetic protection measure.
- 5 25. Device as claimed in any of the preceding claims, characterized in that the magnets result from the family of rare earth-metals of the type Néodyne Fer Boron.
- 10 26. Device as claimed in any of the preceding claims, characterized by the fact that at leadst one magnetic component is entirely or partially protected by Nickel or Gold galvinization.
27. Device as claimed in any of the preceding claims, depending on claim 14, characterized by the mobile component in the sheath is laterally guided by strings or guiding stem stitches which go through the mentionned component.
- 15 28. Device as claimed in claim 27, characterized by the fact that the guidance of the strings or the stem stitches happens accross the opened slots.
- 20 29. Device as claimed in any of the claims dependent on claim 6, characterized in that the first magnetic component is formed by a block (74) that is hollowed out at least partly in the axial direction of at least a cylindrical hole (75) and the second magnetic component is made of a block (71) of identical size equipped with a nipple (73) suitable to join with the hole.
- 25 30. Device as claimed in claim 29, characterized in that the magnetic component consists of two cylindrical holes.

31. Device as claimed in claim 29, characterized in that the nipple (73) is central and/or smaller in size than the hole, which leaves a space between the walls of both after joining.
- 5 32. Device as claimed in any of the preceding claims, characterized in that the magnets are covered with an antimagnetic sheath on at least one side.
33. Device as claimed in any of the preceding claims, characterized in that additionally it contains the means of detecting and indicating closing or opening.
- 10 34. Device as claimed in any of the preceding claims, characterized in that it also includes release mechanisms to alert or control in the event the given specific conditions are or are not met.
- 15 35. Clothing, underclothing (31, 34, 83, 102, 108, S, 115, 133) or accessories (117, 142) characterized in that it consists of at least a device according to any of the preceding claims.
- 20 36. Bra (83) as claimed in claim 35, characterized in that it includes a set of double parallel sheaths (84, 85), which make possible the adaptability to the activities and the movements of the user.
37. Bra (83) as claimed in claim 36, characterized in that it includes a set of double long sheaths.
- 25 38. Bra (102) as claimed in claim 35 characterized in that it consists of removable and adjustable straps (91), the adjustment being in front,

allows the user to bring the breasts closer. Closing is with a triangular sheath (104) which allows for a more precise adjustment and fastening taking the bust measurement into account thanks to horizontal and vertical displacements of the magnetic component in the sheath.

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39. Bra (102) as claimed in claim 36, characterized in that it is has the back in the shape of a " y ", the straps being removable and/or are part of the top of a one or two-piece swimsuit.

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40. Bra (83) as claimed in claim 36, characterized in that it consists of a tightening strap equipped with three magnetic components in opposition, remotely located and one after the other, in the same strap to allow their interaction with each other during adjustment.

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41. Garter belt as claimed in claim 35, characterized in that it consists of the low-grip equipped with two mobile magnetic components (151) in a sheath (152), which can be separated by a seam (153). Closing on the bottom is done by connecting the two magnetic components.

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42. Guépière as claimed in claim 35 characterized in that each consists of at least two sheaths comprising two magnetic components, a fixed and a mobile separated by a seam. Each sheath passes through a rectangular loop a few millimetres larger than the size of the sheath, then is closed on itself.

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43. Watch (117) as claimed in claim 35, characterized in that it consists of a watch strap made up of two sheaths. Each one passes through

a central loop and contains two magnetic components, a fixed and a mobile.

44. Cap (142) as claimed in claim 35, characterized in that it consists of an adjustment strap which contains two magnetic components, a fixed and a mobile.
45. Sport shoe as claimed in claim 35, characterized in that it consists of four sheaths in which each one passes through a loop. Each sheath contains two magnetic components, a fixed and a mobile.
46. Sport shoe as claimed in claim 35, characterized by a a tongue for the tightening and closing of the shoe consisting of a part of the device, the mentioned tongue consisting of a magnet or of a ferromagnetic element in soft mobile material and put together in order to open and close the electric circuit of the electroluminescent diodes, determining the tightening degree of the mentioned tongue.
47. Sport shoe as claimed in claim 35, characterized by two tightening tongues opposing the sheath and magnet or ferromagnetic material in soft sliding material.
48. Bag as claimed in claim 35, characterized by including at least a device in a sheath allowing for the tightening/untightening of the bag opening and/or the more or less tightened position of a flap in volume.
49. Skirt as claimed in claim 35, characterized by including a belt equipped with two sheaths with a magnet or ferromagnetic element in soft sliding material, arranged to cooperate with a magnetic element fixed on the opposing side.